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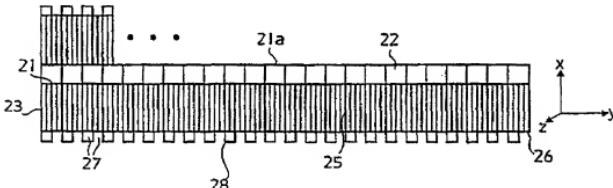
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4) Title: A CHEMICAL HEAT PUMP USING A SOLID SUBSTANCE



7) Abstract

In a chemical heat pump a substance is used which in an efficient way interacts with a volatile liquid such as water. The substance is selected considering among other things the magnitude of its ΔT and its energy content so that the heat pump becomes suited for converting low grade heat energy such as solar energy to cooling for air-conditioning and also for a simultaneous production of heat for example for ice as hot tap water in houses. The heat pump can also be used in a refrigerating box. Suitable substances comprise barium hydroxide, lithium hydroxide, strontium bromide and cobalt chloride. The substance is applied as a layer (23) on the surface of a heat conducting wall (21) by applying a slurry-like mixture of the substance with the liquid when being vibrated to the wall between heat conducting flanges (25). The mixture is dried under a vacuum and is heated and is simultaneously compressed by applying an exterior pressing force. This gives a solid, well adhering layer of a substance having a high porosity which can resist a large number of cycles without any degradation of the internal structure of the layer and of its adherence to the heat conducting wall and the flanges.